Learning Goals

- Explain the purpose of hypothesis testing and how it relates to confidence intervals.
- Identify the null hypothesis (H_0) and alternative hypothesis (H_A) in a given context.
- Interpret the meaning of "rejecting" and "failing to reject" the null hypothesis.
- Know how to calculate a test statistic and p-value.
- Connect the idea of sampling variability to the rejection regions in a normal distribution.

Key Terms

Define each term in your own words and include an example when possible.

- Hypothesis Test:
- Null Hypothesis (H_0):
- Alternative Hypothesis (H_A):
- Significance Level (α):
- p-value:
- Critical Value:
- Test Statistic:
- Rejection Region:

Key Concepts

1. What is the main goal of hypothesis testing?

2. What do the null hypothesis and alternative hypothesis each represent?

3. What are the only two possible conclusions we can make in hypothesis testing?

4. How does the significance level (α) relate to the blue and white regions on the normal curve? (from notes)

5. What does it mean if our sample mean falls in the rejection region?

6. How is hypothesis testing connected to confidence intervals?

7. Suppose Emmit claims the average time it takes him to walk to work is 15 minutes. One week, he collects a sample with a mean of 18 minutes. What might H_0 and H_A be in this situation?